



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/365,118	07/30/1999	DIETER MICHEL	56/327	1392

757 7590 09/25/2003

BRINKS HOFER GILSON & LIONE  
P.O. BOX 10395  
CHICAGO, IL 60611

EXAMINER

NATIVIDAD, PHILIP SANA

ART UNIT	PAPER NUMBER
----------	--------------

2877

DATE MAILED: 09/25/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/365,118

Applicant(s)

MICHEL ET AL.

Examiner

Phil Natividad

Art Unit

2877

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 19 May 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 2, 3-12, and 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishizuka et al ('296). Ishizuka discloses a rotary position measuring system in accordance with interferential operating principle comprising scanning unit (comprising light source 1 and detector element 6), reflection graduation structure G2 opposite the scanning unit, and radial transmission graduation structure G3. Ishizuka does not disclose a housing; however, it is notoriously well known in optical arts to enclose components in a housing for a motivation of reducing ambient light and for mounting components to maintain positions/alignment.

Ishizuka and instant claim 1 both recite that light beams first reach a transmission grating, diffract, impinge on a reflection grating, back-reflect, and then interfere for detection/measurement. Ishizuka does not specifically disclose that the reflection graduation structure be stationary ("scanning") and the transmission graduation structure be rotatable ("measuring"); however, as the prior art discloses gratings simply displaceable **relative to each other**, it would have been an obvious rearrangement to one of ordinary skill in the art to have **either** of the gratings as movable and the other stationary, e.g., that G2 be stationary with G3 rotating on the graduated disk. Such would give equivalent relative measurements, and it would have been obvious to one of ordinary

Art Unit: 2877

skill in the art to make such a rearrangement, for motivation of e.g. maintaining alignment of the scanning unit (1, 6) and scanning grating G2.

As to claims 2 and 20, with scanning unit and G2 mounted to the housing for motivation of alignment (see above), it would have been obvious to one of ordinary skill in the art to make the housing (or at least the part on which scanning unit and G2 were arranged) to be insensitive to oscillations or fluctuations, for motivation of maintaining said alignment so as not to affect signals received by the detector.

As to claims 3-12 and 18-19, it would have been obvious to one of ordinary skill in the art to fasten or arrange the grating as is well-known, of which Official Notice is taken, for motivations of e.g. maintaining alignment or simpler manufacturing.

3. Claims 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishizuka as applied to claim 1 above, further in view of Takamiya et al. (,667). Ishizuka teaches applicant's invention as applied to claim 1 above, except without expressly disclosing bar heights.

Specifically as to claim 16, note Takamiya col. 3 lines 39-41. It would have been obvious to one of ordinary skill to modify the prior art to meet the claimed limitations of bar heights, of which Official Notice is taken, for motivation of e.g. diffracting light more strongly for better signals.

### ***Response to Arguments***

4. Applicant's arguments filed 5/19/3 have been fully considered but they are not persuasive.

5. Contrary to applicant's assertion, G2 need not be rearranged so that light reaches it first. Further, G2 remains a reflection grating and does not necessitate a larger apparatus if simply the

Art Unit: 2877

other grating rotates instead of it. Ishizuka does not specifically disclose a measuring grating "located between the scanning unit and the scanning graduation structure", but as noted above, it would have been an obvious modification to have the existing transmission grating between the units become the measuring grating, and the existing reflection grating become the scanning grating. Contrary to applicant's argument that there is no motivation for arranging as to (newly amended) claim 2, the previous rejection indicated a motivation of "maintaining said alignment", also repeated above.

6. In response to applicant's argument as to claims 14-16 that modification in accordance with Takamiya is "pure hindsight" and "without any basis for the assertion", the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, applicant appears to argue that Takamiya's disclosure of teachings "to reflect and diffract light... especially strongly" is not a basis for providing better signals. However, it is well known that a photodetector will provide more of a signal (a "better" signal) if more photons, i.e., "especially strong" reflected light is directed to it.

7. In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the

time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

### ***Conclusion***

8. Since the same bases for rejection are repeated, **THIS ACTION IS MADE FINAL**. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner can be directed to Phil Natividad whose telephone number is 703-306-5944. The examiner can normally be reached on Tuesday through Friday and alternating Mondays; and supervising patent examiner Frank G. Font can be reached at 703-308-4881.

In view of delays in mail delivery in recent days, we at the USPTO would like to encourage you to communicate with the USPTO via facsimile. Facsimile transmissions may be used for correspondence as set forth in 37 CFR 1.6 such as: amendments, petitions for extension of time, authorization to charge a deposit account, an IDS, terminal disclaimers, a notice of appeal, an appeal brief, CPAs under 37 CFR 1.53(d), and RCEs.

PTO Form 2038 should be used when authorizing payment by credit card; this form is maintained separate from the file to ensure confidentiality.

Art Unit: 2877

The USPTO has recently installed server software that enables us to automatically receive facsimile transmissions and route them to the appropriate groups. No special equipment is needed by our customers to use this system other than a regular facsimile machine. Each Technology Center has its own facsimile numbers associated with our server for Official replies to non-final Office actions and for Official replies to final Office actions. In addition, each Technology Center has a Customer Service Center on our server system, and can answer any general application status questions you might have, can provide Examiner information, and answer paper queries.

The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9318 or 703-308-7722 for regular communications and 703-872-9319 or 703-308-7722 for After Final communications.

Tech Center 2800 Customer Service is at 703-306-3329 or 703-872-9317. Any inquiry of a general nature or relating to the status of this application or proceeding can also be directed to the receptionist whose telephone number is 703-308-0956.



*psn*  
Phil Natividad  
Patent Examiner  
psn  
September 10, 2003

**FRANK G. FONT**  
**SUPERVISORY PATENT EXAMINER**  
**TECHNOLOGY CENTER 2800**